EMP 370

aluminum portable solution

User's Manual

RoHS 2002/95/EC   FC CE CCC
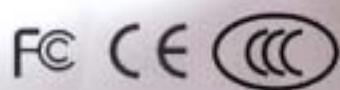
EMP Series User's Manual

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EMP 370

Specification of EMP 370

Model		EMP 370
LCD	Panel Size	17"
	Panel Adjust	Fixed
	Illumination	280 nits
	Resolution	1280 x 1024
	Working Temp.	0°- 50°C
	Protection	Yes
	Dazzled-Free Screen	None
Digital Conversion Board		CB 5621
Dimension	H x W x D (mm)	346 x 433 x 243
	H x W x D (Inch)	13.60 x 17.05 x 9.57
Weight	Kgs.	13.5
	lbs	29.7
Active PFC Power		PS2 400W w/ 12cm Fan
Expansion Slots		7
Drive Bay	Open	2 x 2.25"
		2 x 3.5"
	Hidden	None
	Placement	Vertical
Construction		Rugged, Shock Resistant
Material		Aluminum / Steel
Motherboard Form Factor		ATX
Keyboard		Reg.108 keys
Mouse		Touch Pad
Language		English (US)
Speaker		Preinstalled with build-In Amplifier
Approval		CE, FCC
K/B Language Option		CH, UK, GR, JP, KO, RU, SW, IT, SG

EMP 370 features:

- Heavy duty & powerful rugged aluminum chassis.
- All-Corner rubber bumpers.
- Offer 7 slots expansion capability to accommodate ATX, Ext-ATX motherboard form factor.
- High performance processing power.
- SXGA （1280*1024）TFT LCD Screen (17″) steel frame
- Dazzled-Free screen (Optional)
- The new RJ-45 cabling style
- Huge 12cm rear cooling fans

The EMP 370 is a heavy-duty rugged industrial portable computing solution. And it is highly compatible across a broad range of hardware, software and operating systems. It has more computing power than that of most desktop, and traditional portable computers. Its compact size add-in slots, Pentium 4 processing power, and a SXGA resolution TFT color display make it a high performance field solution. The EMP 370 portable complies with FCC class B Part 15 and CE Mark. It is an unpredictably powerful choice for workstation or server.

You can find EMP in industrial environment serving you with high performance computer bus analysis & telecommunication testing, multi-protocol network analysis, PLC programming, real time automatic industrial application and much more. It is designed to function with your needs in mind.

The EMP is a well designed compact portable computing machine that is both nimble as well as rugged. It will serve your needs for both expansion as well as performance. An Important aspect of the EMP is the concept of standardizations, which means all components that you can find off the shelf or proprietary designed will fit into the EMP 370. If the peripheral is designed according to industry standard for interconnectivity then it will fit. With that in mind, we will layout and identify each of the component. In this section you can find each component of the EMP with respect to its purpose and usage.

eMP 370
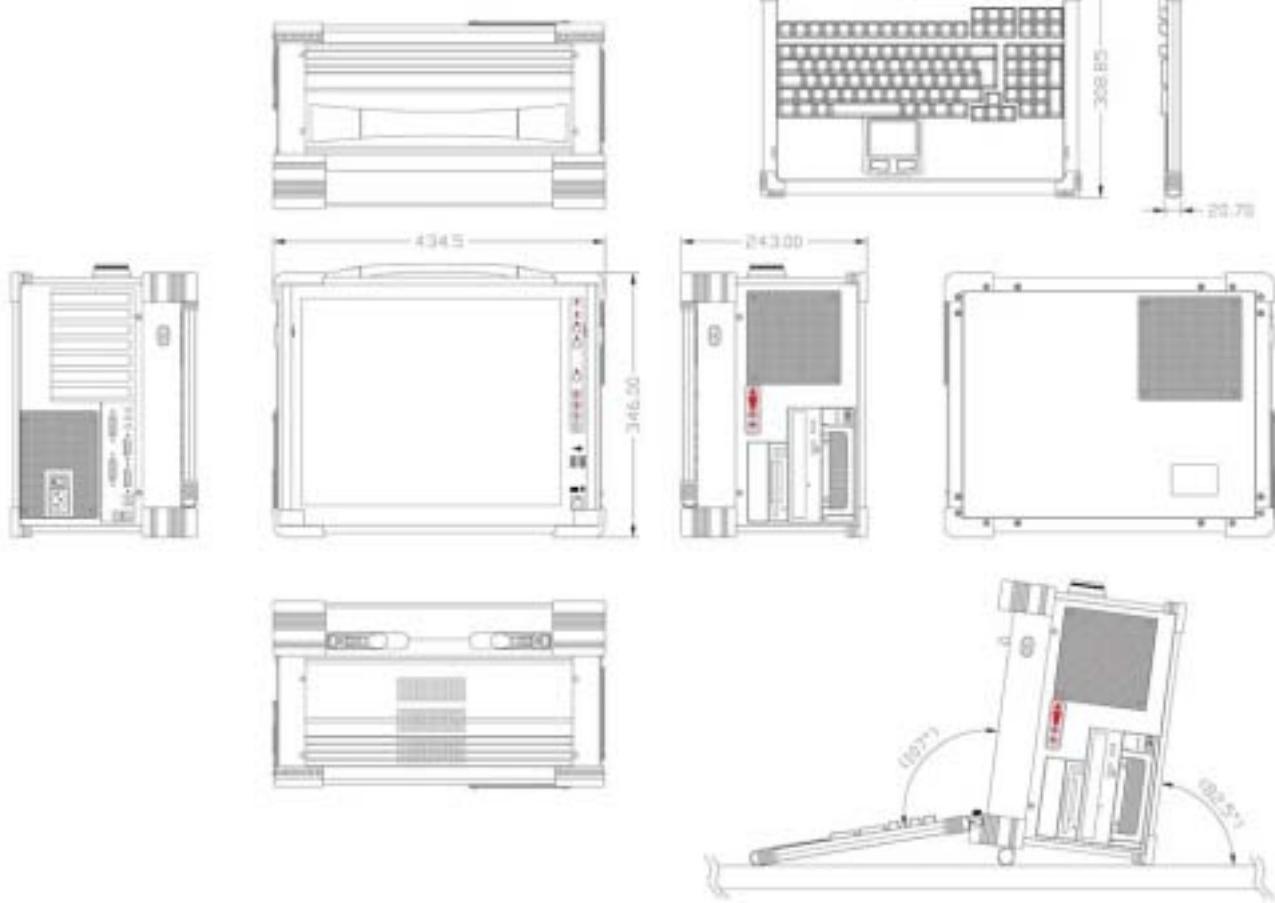
Drive Bays:

EMP 370 – with 2 x 5.25″ & 2 x 3.5″ Drive Bays.

Keyboard:
108 key regular keyboard is integrated with the portable to allow closing against the portable for both convenience and protection w/ rubber in transportation.

Keyboard Cable:
The keyboard cable connects to the keyboard internally with cable jack on the other end for insertion into the portable lower right hand corner; allow easy access and removal of the keyboard.

LED Status Indicator:
The green LED indicates power on, the red LED indicates hard disk drive access.

Display:
Integrated TFT Active Matrix LCD provides SXGA 1.6M color display with resolution of 1280*1024.

Speaker:

Integrated two speakers to allow media audio play back without having to outsource attachment. Speaker has volume control for different environmental usage.

Drive Bay:

The EMP 370 comes standard with 2 x 5.25″ & 2 x 3.5″ Drive Bays.

Rubber Bumper:

The EMP 370 has new-designed rubber bumper for each corner to protect sudden shock from various angles.

Power Switch:

The power switch to turn on the computer is located on the right side.

Fan:

Located inside & rear side of the chassis, these fans will help draw out and push in cool air to alleviate excessive heat built-up for components inside the portable, allowing worry free operation.

Filters:

Filters located on both sides of the portable help block out dust and particle from entering the machine.

Expansion Slots:

Opening to provides access to the I/O ports on the installed add-in cards.

Handle:

Large handle provide convenient transportation of the portable with comfort and ease.

Keyboard Release Buttons:

These buttons when pushed will release the locking mechanism to detach the keyboard from the main portable chassis.

4.1 Keyboard and Touch pad:

How to release Keyboard

There are two release buttons located on the top-left and top-right of the keyboard. When pushed, the keyboard is disengage from the portable and will release the keyboard structure. There are also two mounting leg located at the bottom of the keyboard that are inserted into the portable for fitting and stability, in which case you can start lifting the keyboard upward. The keyboard now can then be removed for usage.

Push up
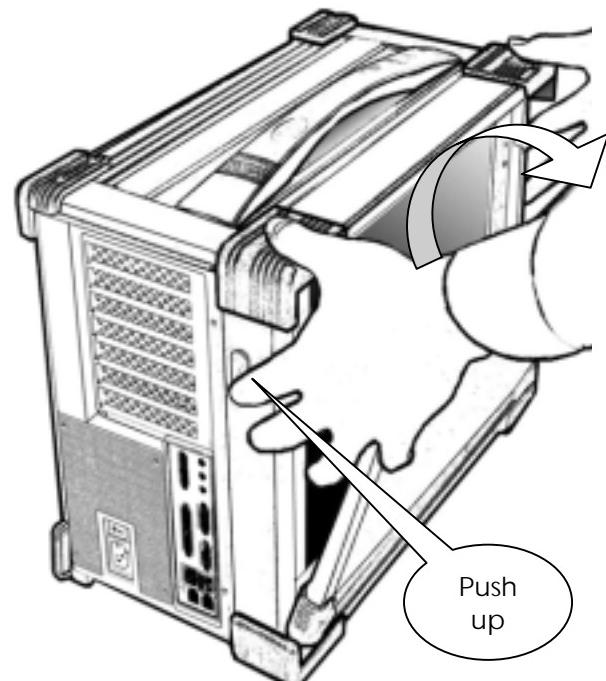
How to close keyboard

Closing the keyboard back onto the portable follows the same procedure as opening, in a reverse manner. It is noted that the keyboard cable should be put back into its proper lodging location. Make sure the two locking mechanisms are properly secure after it is put back.
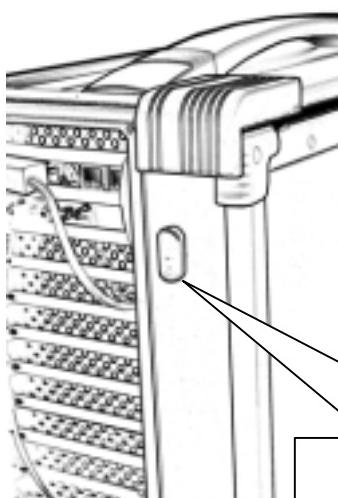
Press to release

What to look for

The keyboard cable is located on the top portion of the keyboard; it is a coil cable with a RJ45 connector at the end. The jack should now be attached to
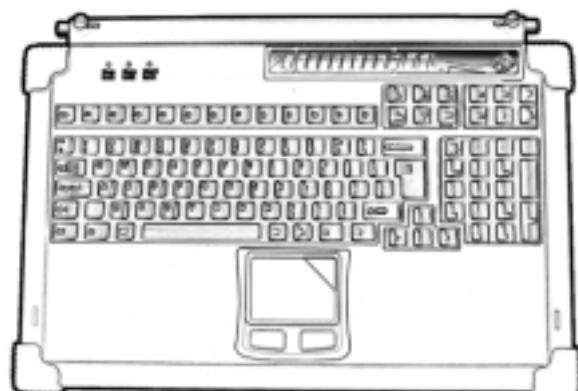
the portable (at the lower right hand corner) to be operational.

K/B usage

Keyboard is the main medium for inputting data into the system. The keyboard of the EMP 370 portable contains both a keyboard and a touch pad. Keyboard is a NB type 88-keys Windows ready keyboard with power function and shortcut keys.

Keyboard position

You may want to adjust the keyboard angle by folding the top portion of the keyboard or just by taking off the main case.
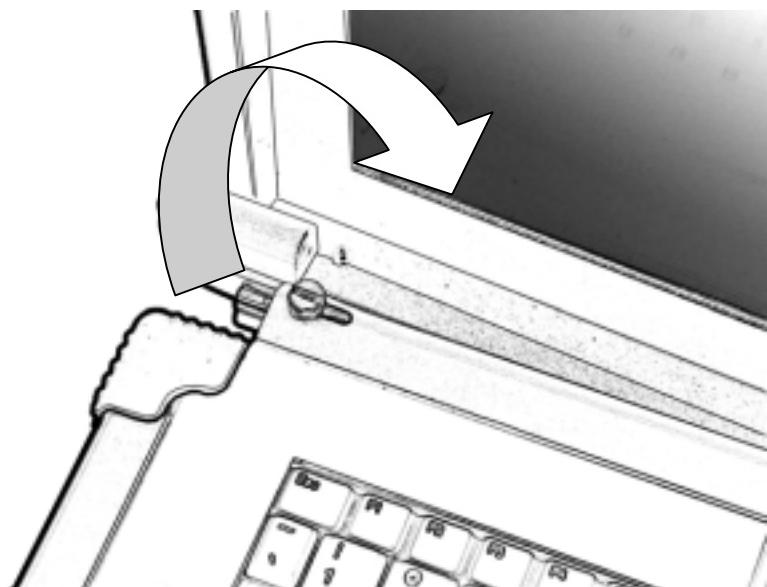
TOUCHPAD operation
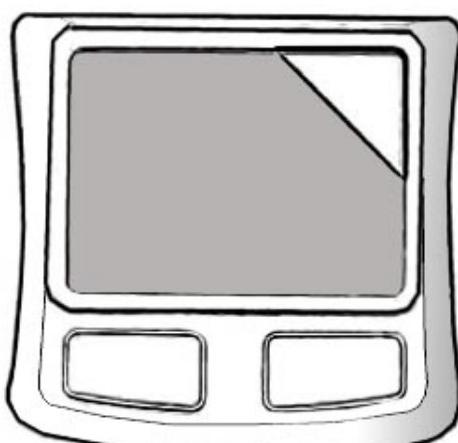
TOUCHPAD surface can be used to move the cursor in the GUI environment by placing and moving your finger. The two buttons located below the touch pad act as same as the mouse left/right button. Or you may wish to tap on the touch pad to indicate a left click.

4.2 Side Panel:

Depending on the system board and your add-on cards, you may also have other ports such as Ethernet port, and Audio ports. When in use, side panel can also be stored in a slot located on the back cover.
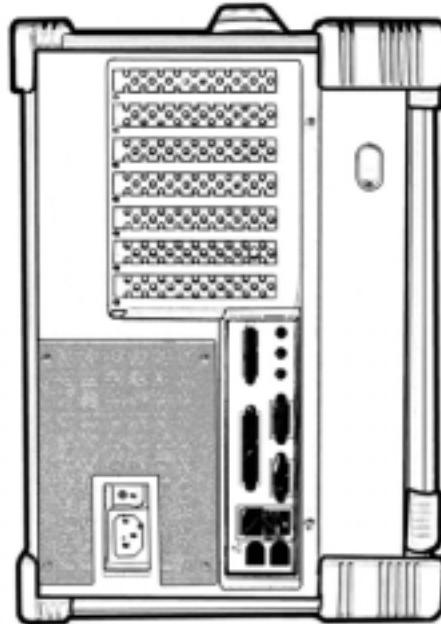
4.3 Power switch and plug:

The power receptacle is located on the front panel of the machine near the right-center. The three-prong power plug is supplied. Depending on your Power supply type, you may find a main power switch located next to the power receptacle and the position of the switch is of the following: O=Off, I=On. To power up the system, user still require to power on the machine on the front of the portable, labeled Power. If your power supply does not have a main switch, user will control power on/off using the power switch located in the front.

4.4 Power supply（PS/2）

It's auto-sensing full range with Active PFC, **dual-fan 450W** output.
And it could be upgraded to 550W or 600W as options.

4.5 Hooking up external monitor:

The external CRT monitor / Projector can be hooked up via the side panel VGA (15pin) port while the system is off. The CRT/Projector will provide the cable to be inserted into this port. When connected, the display should appear if the machine is powered on. The signal is standard with the internal viewing resolution and the default setting is simultaneous display on both portable's LCD and CRT. To change the output mode (Simultaneous/LCD only/CRT only), please refer to your VGA setting.

4.6 Audio:

The audio of the system does require user to install a sound card or at On-Board I/O of ATX Motherboard.

The built-in internal amplified speakers provide a phono stereo plug that will fit into the output port of the sound card.

Audio Area
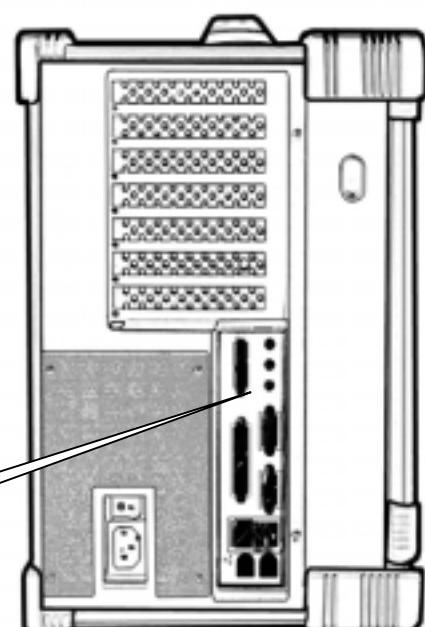
4.7 Volume adjustment:
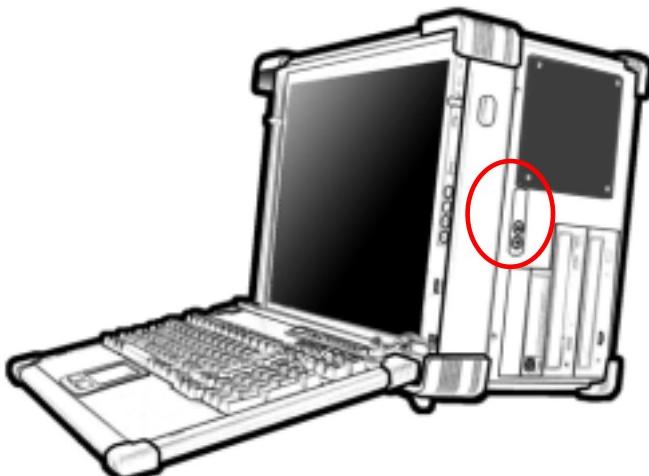
There are two volume adjustments on the side panel.
Each volume adjustment may adjust right or left sound performance by any situation if possible.

4.8 CD-ROM & FDD Drive:

CD-ROM is important in that many of the applications available today are store on the CD due to their larger storage capacity. CD is read-only media (a CDR or CDRW are medium that are for user creation of data on CD medium) and is pre-loaded with data. You may open the CD-ROM drive door by pushing the eject button located on the door of the drive. During access to the DVD-ROM, the light on the CD door will light up. Floppy disk drive is essential as they are still an important medium for transferring data before systems.   Floppy disks are available in all computer stores and are ready for usage in most case if pre-formatted.
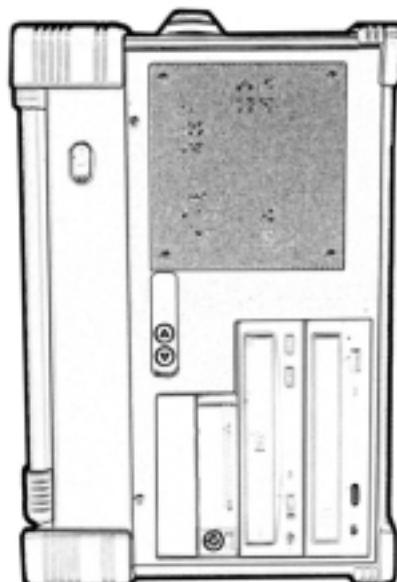
4.9 Bottom Holders:

The bottom holders may support the whole frame up in higher position, thus providing better angles for operating.
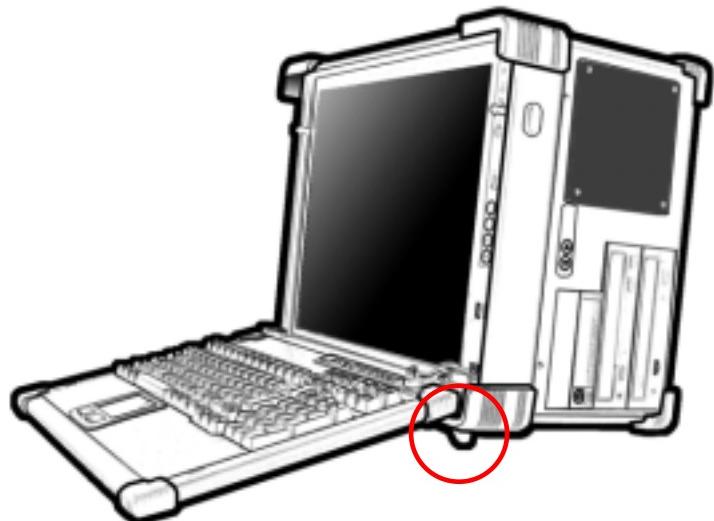
4.10 VGA

Based on your model you may have either:

1. 16MB ATIM3, 2x AGP （with special backplane ）
2. 64MB ATIM6, 4x AGP（with special backplane）
3. A/D Conversion Board
4. On-board system VGA
5. 64MB ATI M6 D/C Video Ram

Please refer to your VGA user's manual for details

4.11 Extended USB Port

There are two USB ports on the front panel. You could insert the thumb drive or other usage.
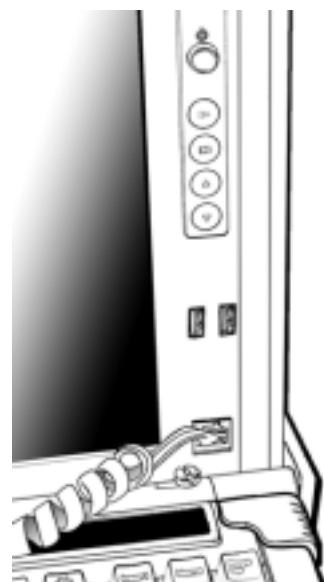
4.12 Side Cooling Fans

To release the heat inside of the chassis, there are two cooling fans on the left side.
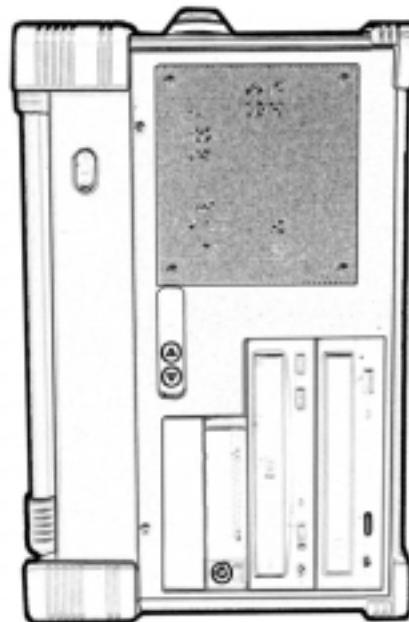
4.13 Rear Cooling Fans

To release the heat inside of the chassis, there is one 12cm huge cooling fan near the slot area on the back cover.
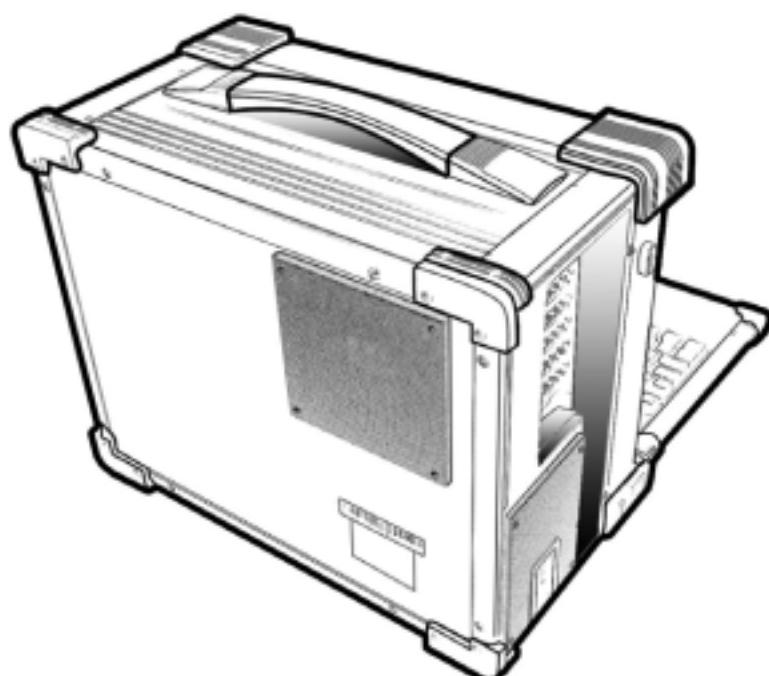
Before you attempt to open the EMP-370 and do any hardware installation, make sure you have the proper knowledge of installation and compatibility features of any upgrade. And understand the concept of electrostatic damage that can occur during handling of sensitive electronic equipments. Proper precaution should be taken before proceeding.

# 1. Open back cover------------------
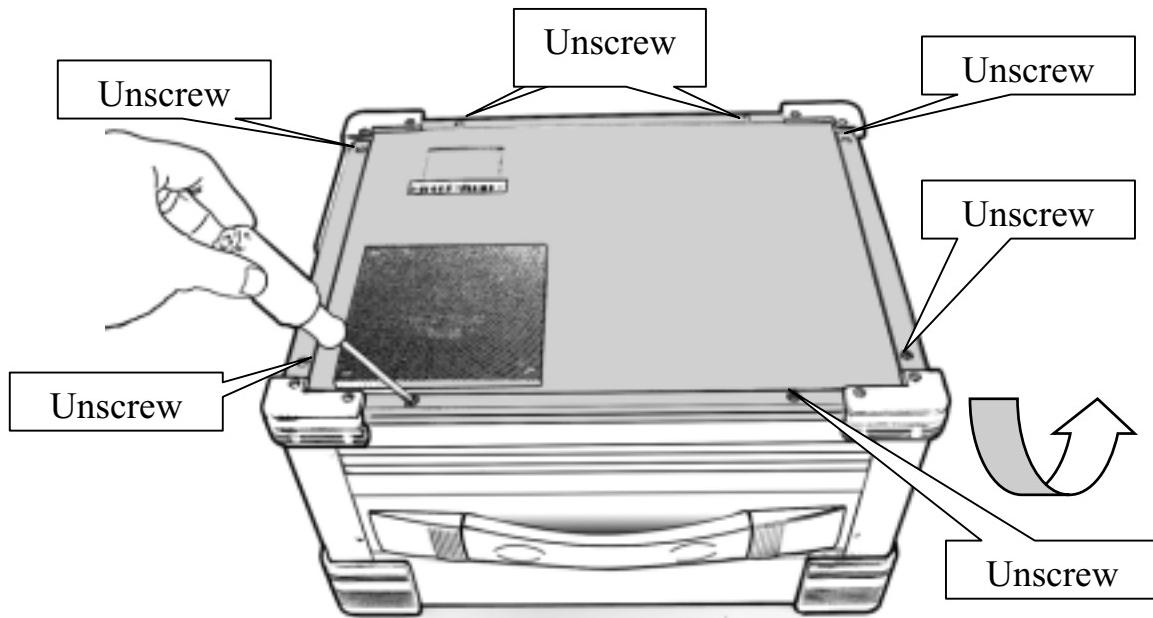
2.Remove stabilizer bars ------
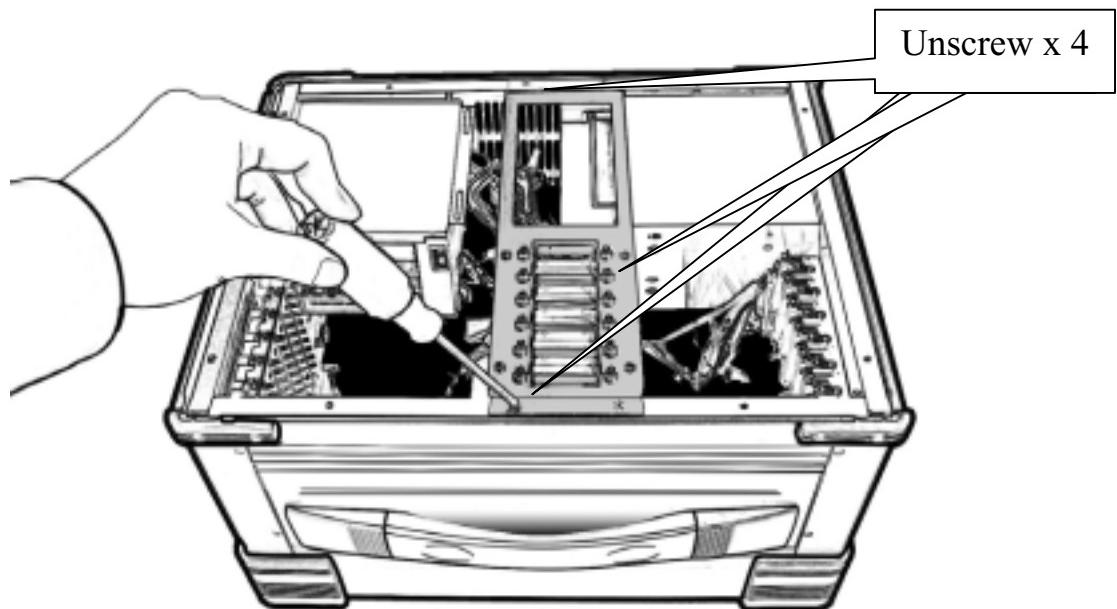
3. Remove the bottom cover----------

Unscrew x 2

Unscrew x 2

4. Remove the drive bay----------

Unscrew x 8

3mm

Be sure to use the Allen key driver while removing the side cover.

Unscrew x 2

Unscrew x 4

Slide & move out the fan slowly.

Unscrew x 2

Be sure to put on the rubber ring while mounting the screws.
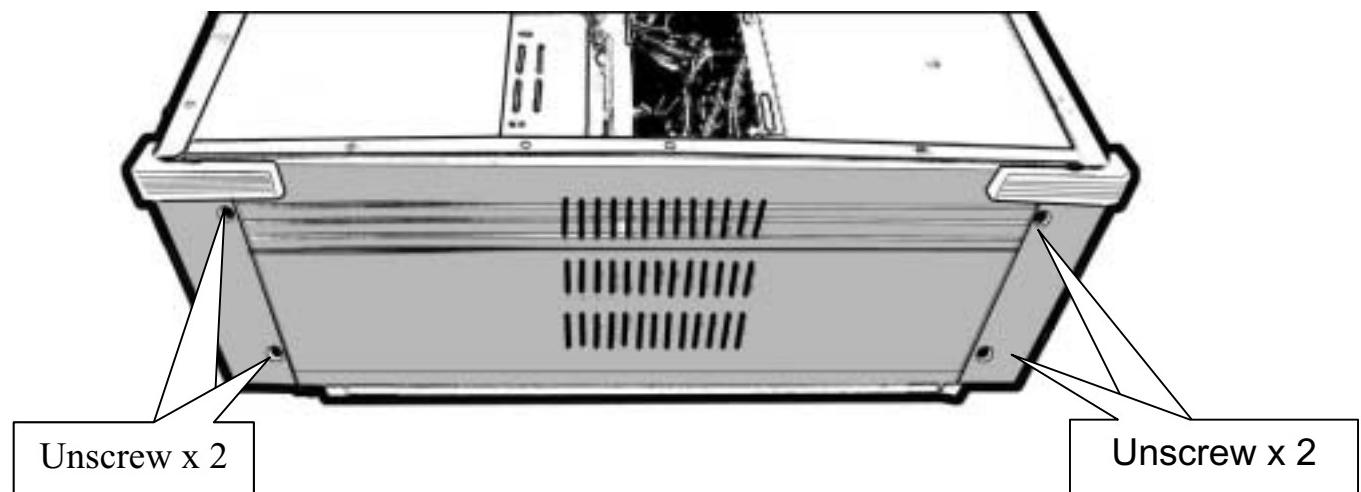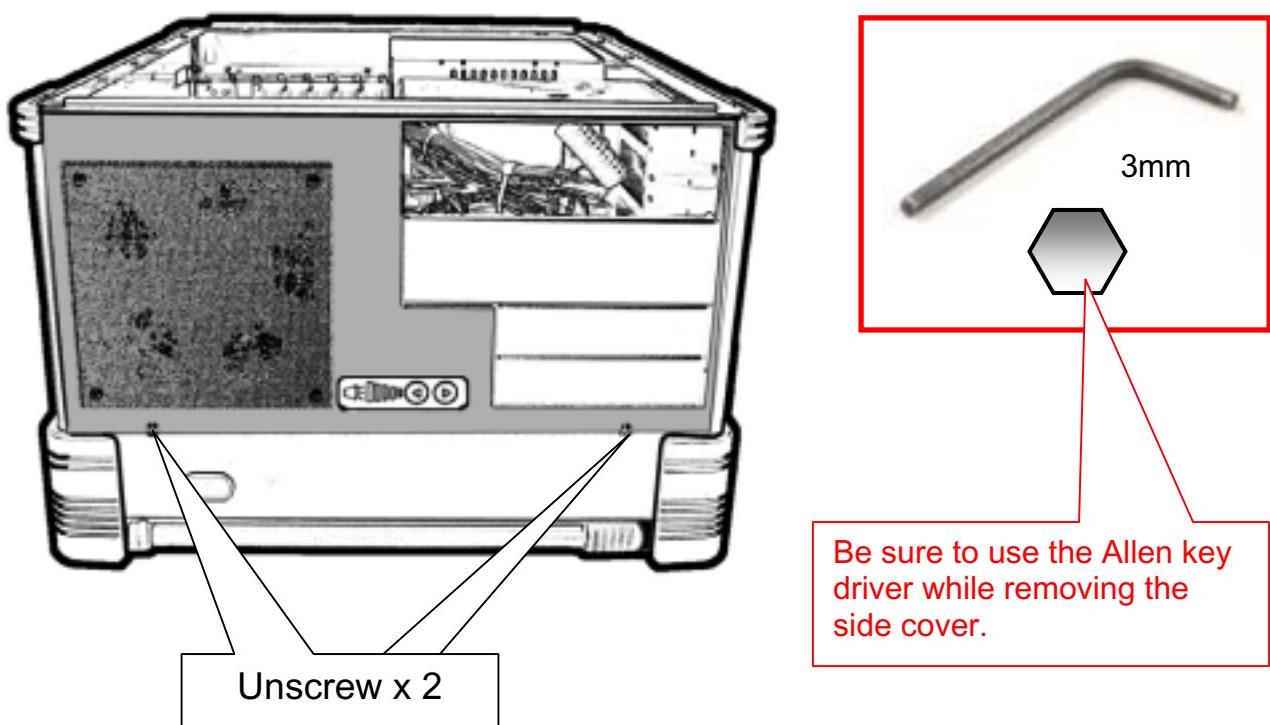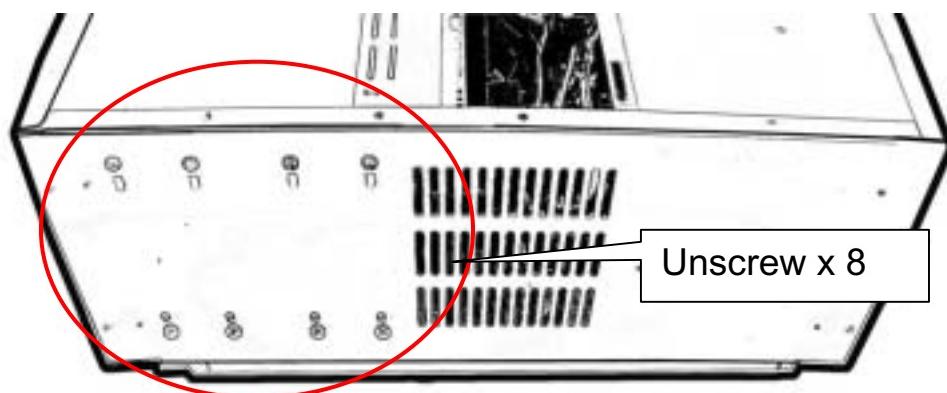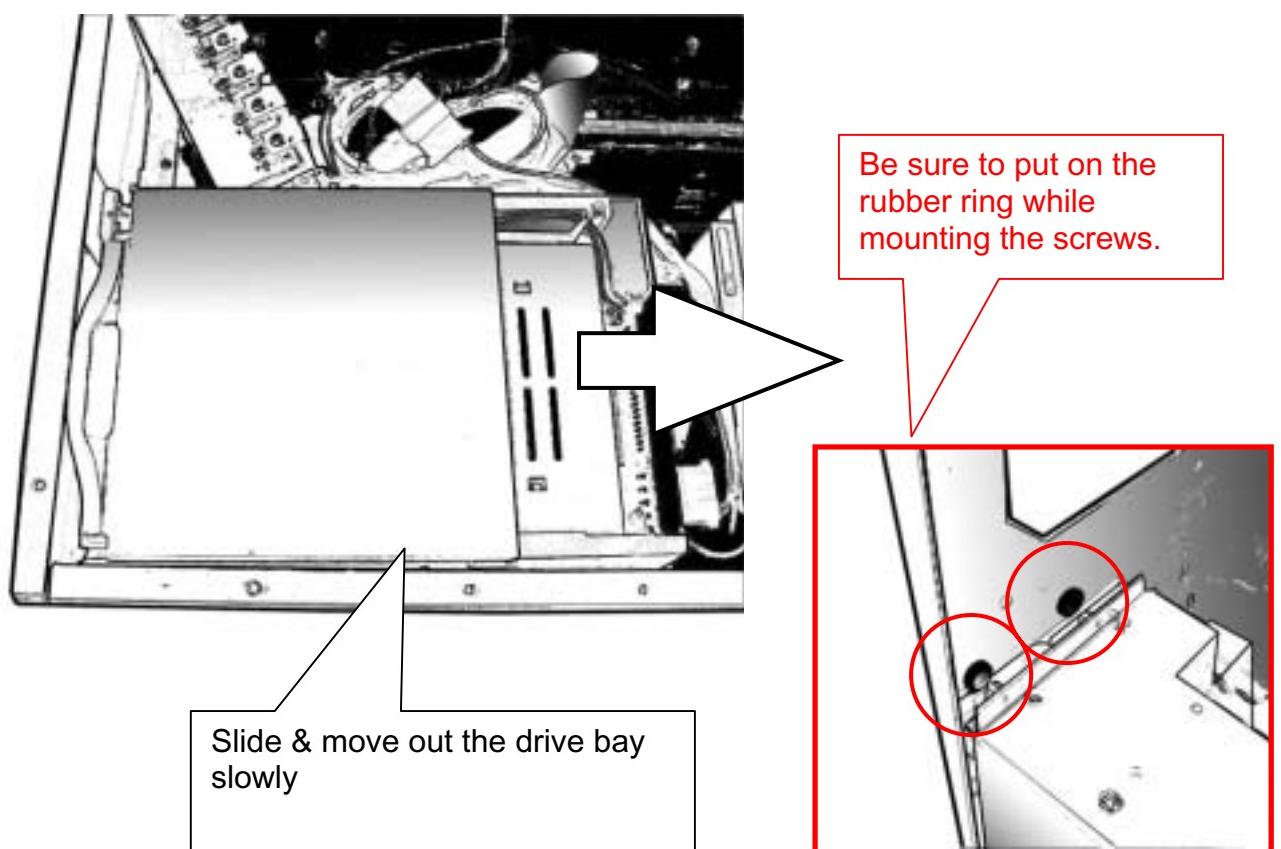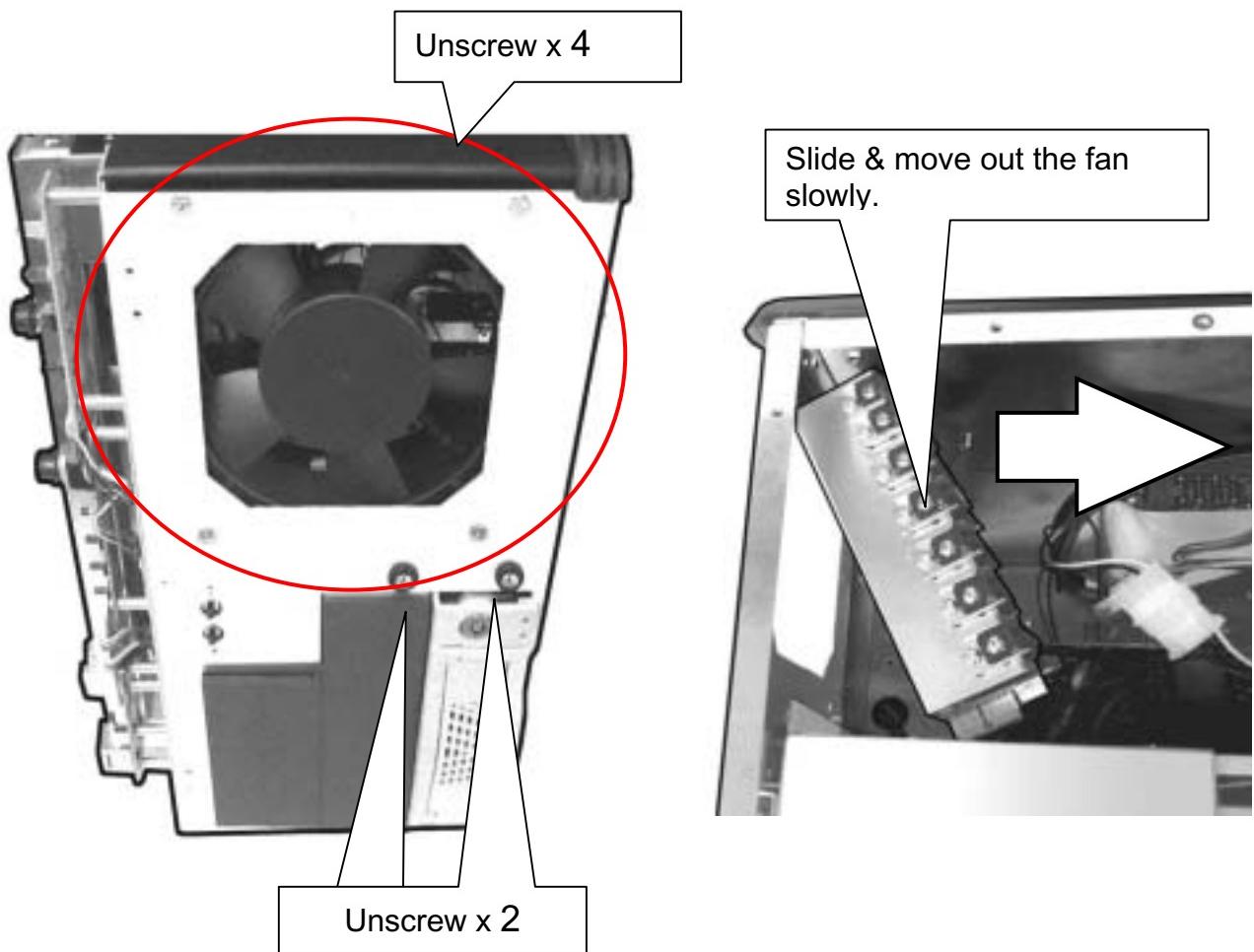
Slide & move out the drive bay slowly

5. Remove the power supply----------

3mm

Be sure to use the Allen key driver while removing the side cover.

Unscrew x 2

Unscrew x 4
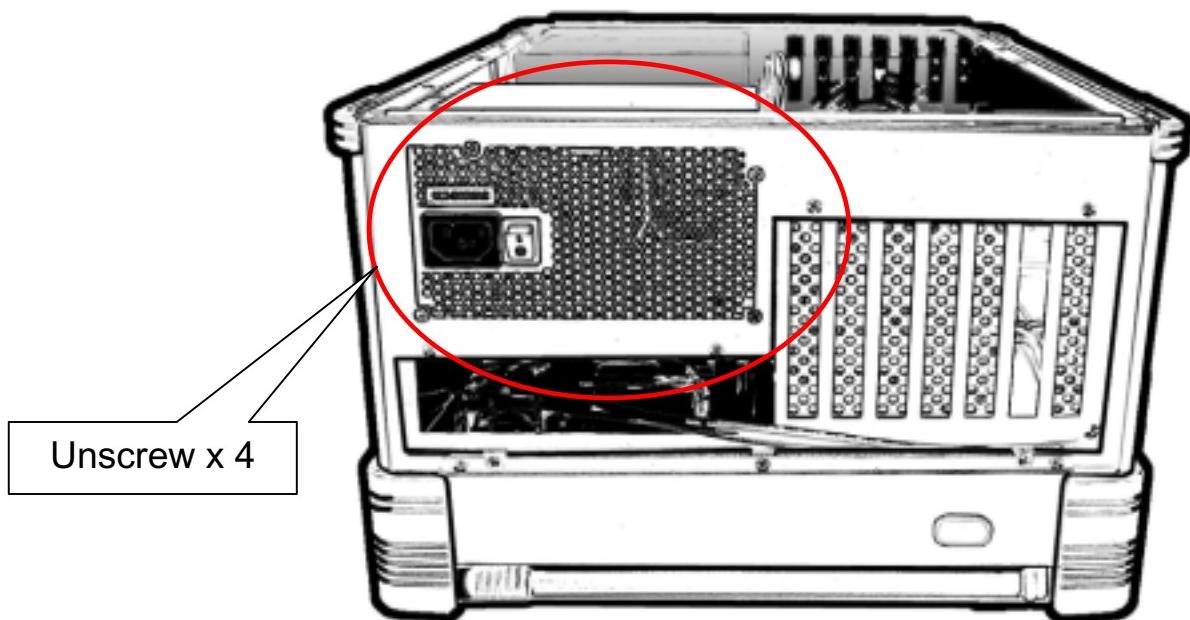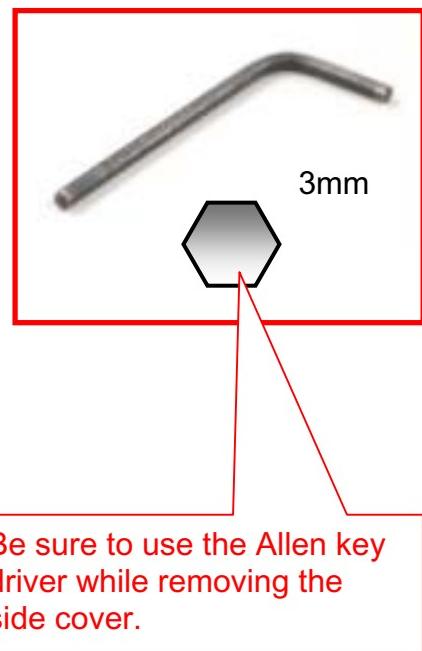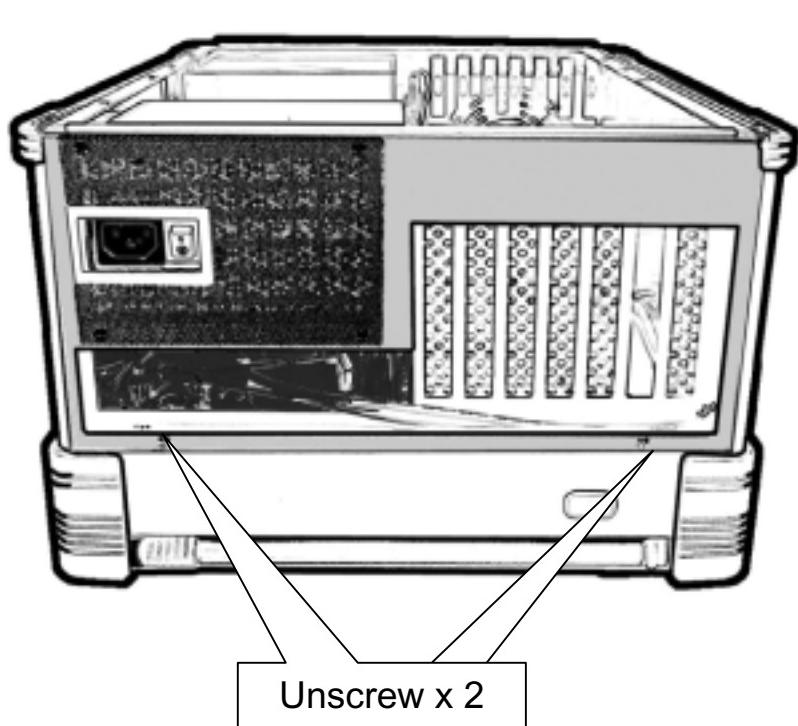
6.Insert system board mounting standoff--------

Standoff

Standoff
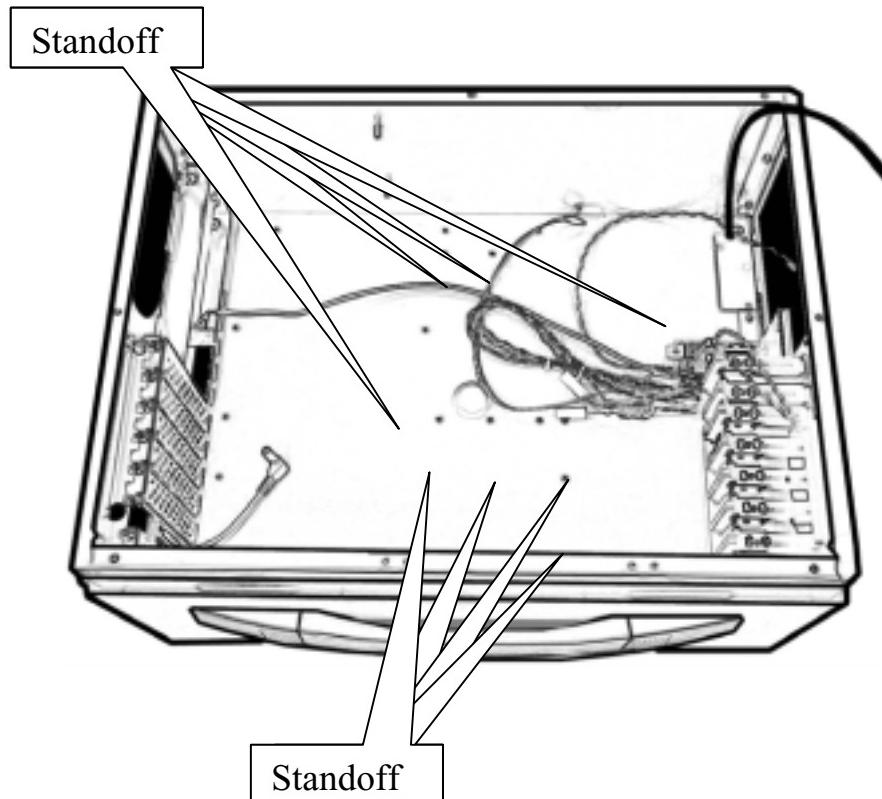
*Please refer to your system board manual for detailed references.

7.Install system board with CPU and RAM-------

PCI slots

Power Connection

RAM

CPU
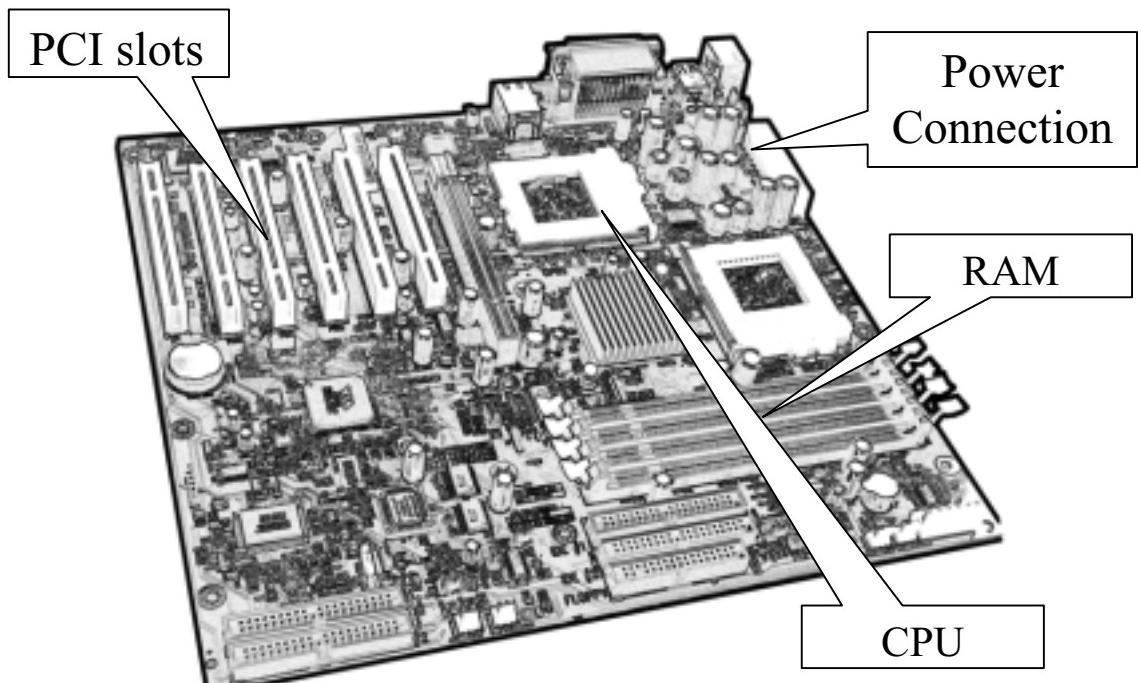
*Please refer to your system board manual for detailed references.

8.Connect keyboard and TOUCHPAD cables--------

Cables
Plug
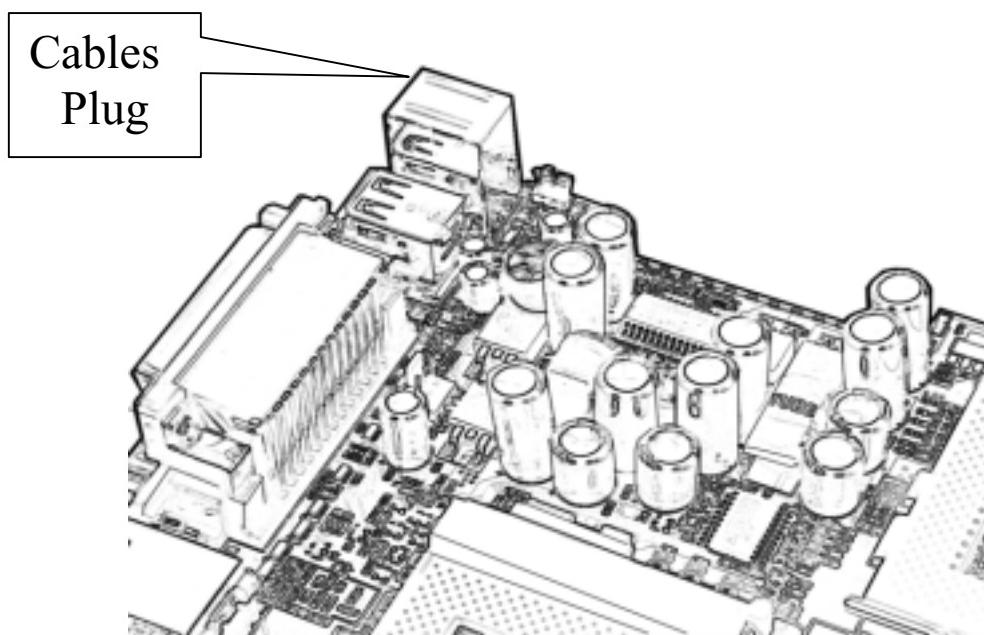
*Please refer to your system board manual for detailed references.

9.Connect power, LED, and speaker wires--------

Power wires | LED wires | Speaker wires

Please refer
to System
Board Manual
for actual
location.
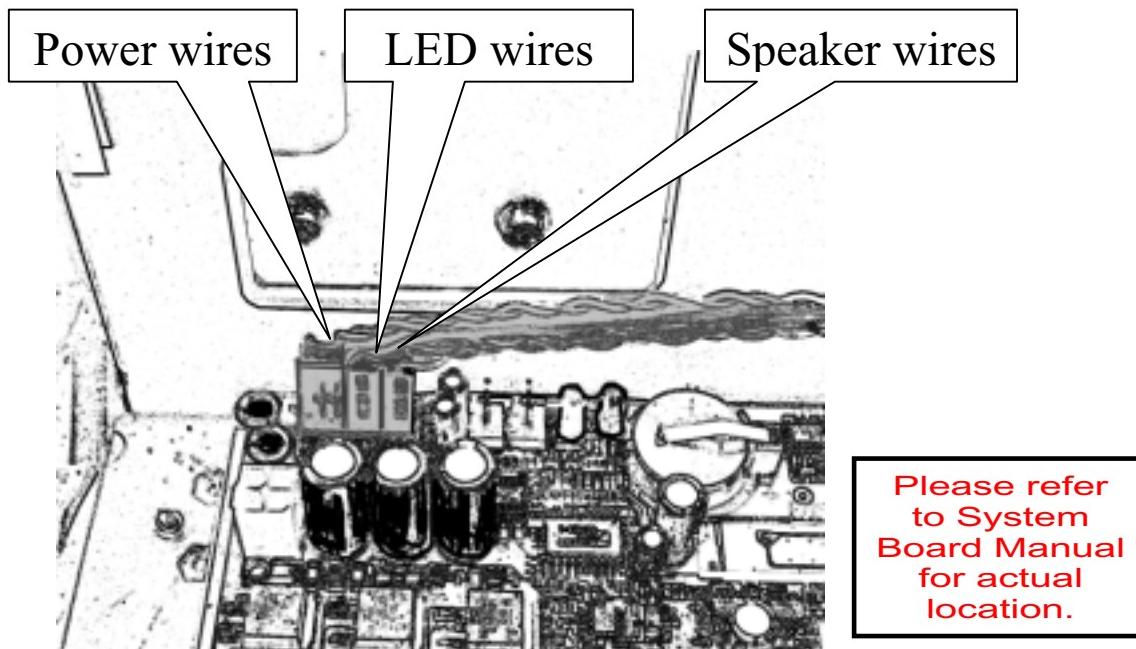
10.Install CD-Rom into Drive bay housing-----

Side Screw x 2

Side Screw x 2

CD-ROM
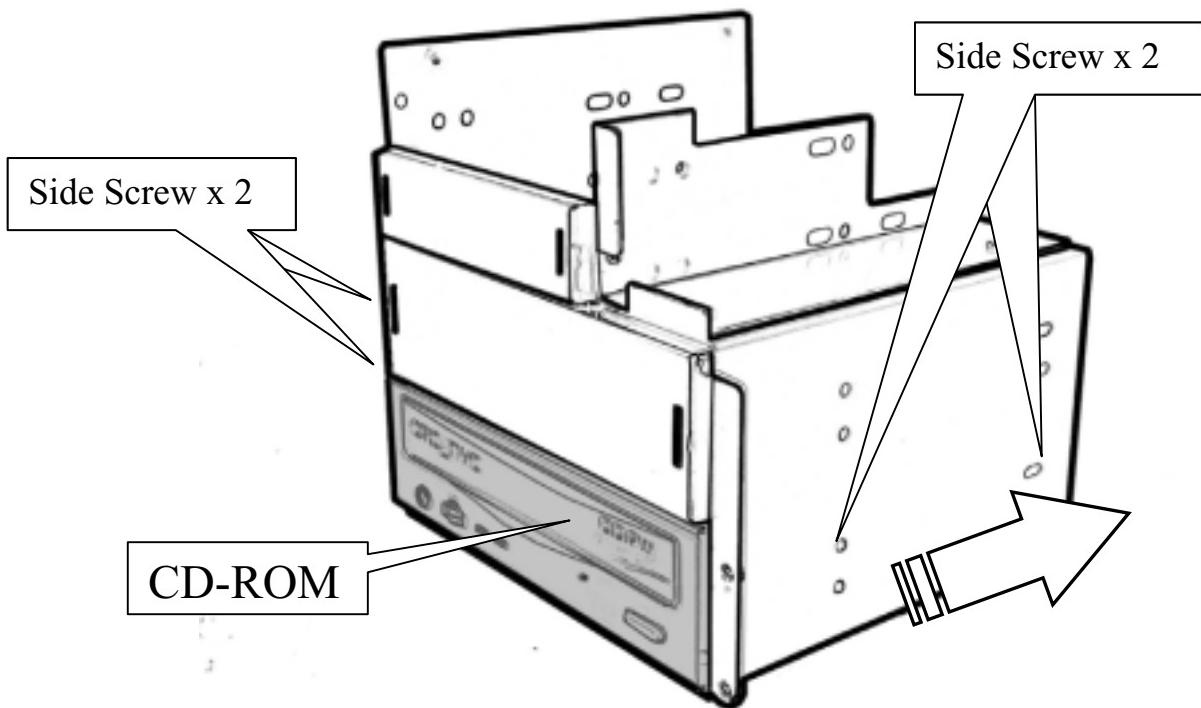
11.Install FDD and HDD into drive bay housing---

Side Screw x 2

Screw x 2
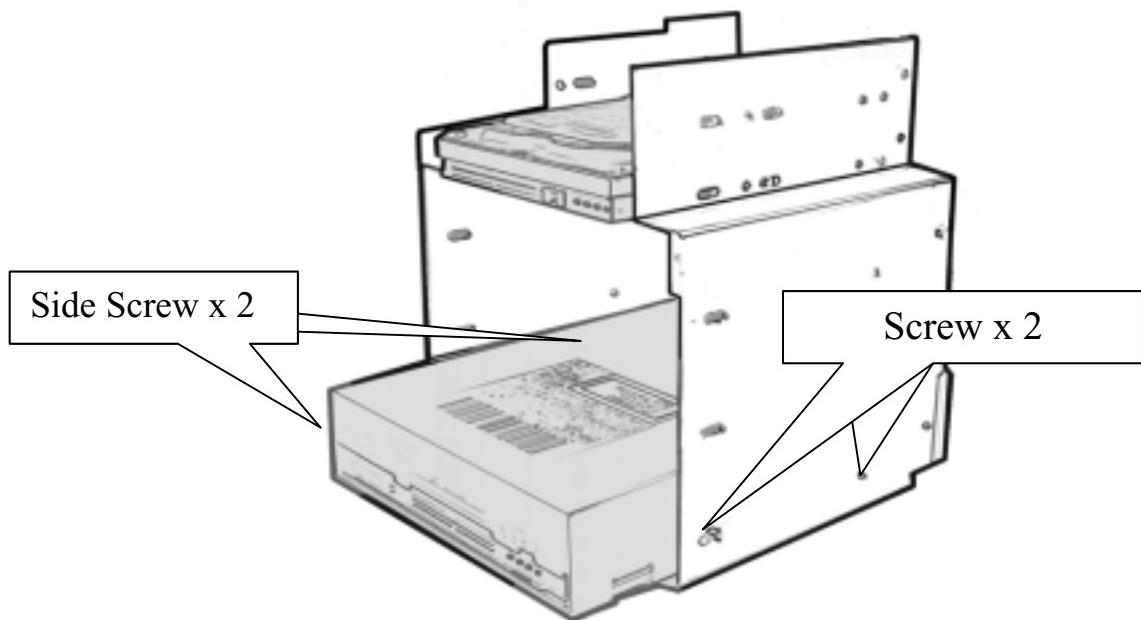
12. Install the Drive Bay
into Chassis-----

Side Screw x 2

Bottom Screw x 8
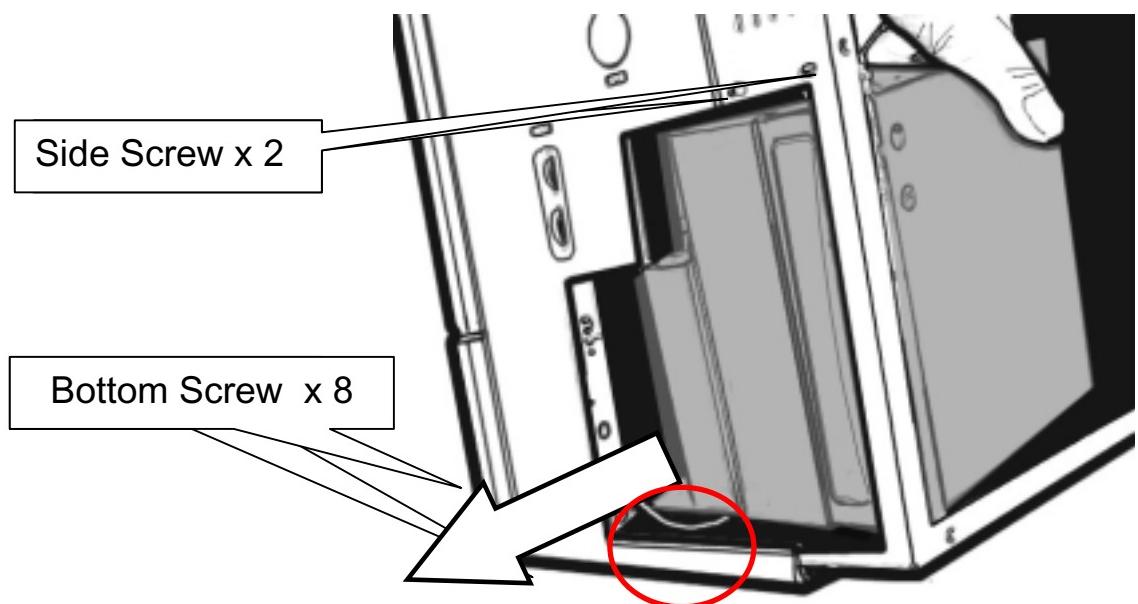
※Please be careful with the cable while removing the drive bay.

13.Connect IDE and
power cables-----

IDE cable

Power cable
Under Drive
Bay
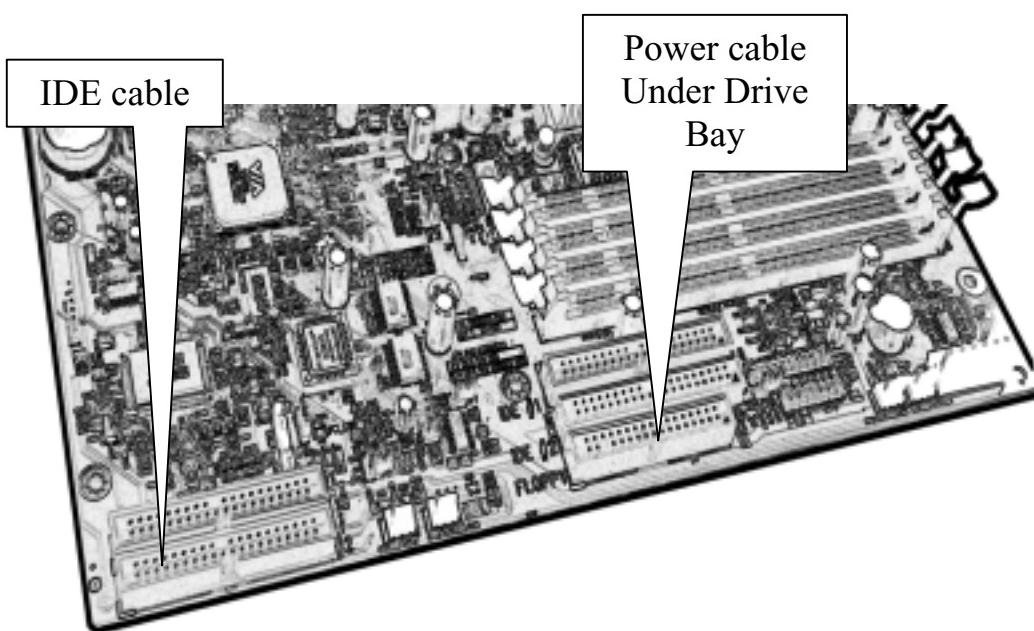
※Please refer to your model's removal process for reinstallation.

14.Install VGA card &
LCD ON/OFF wire---

LCD on/off wire

VGA card wire
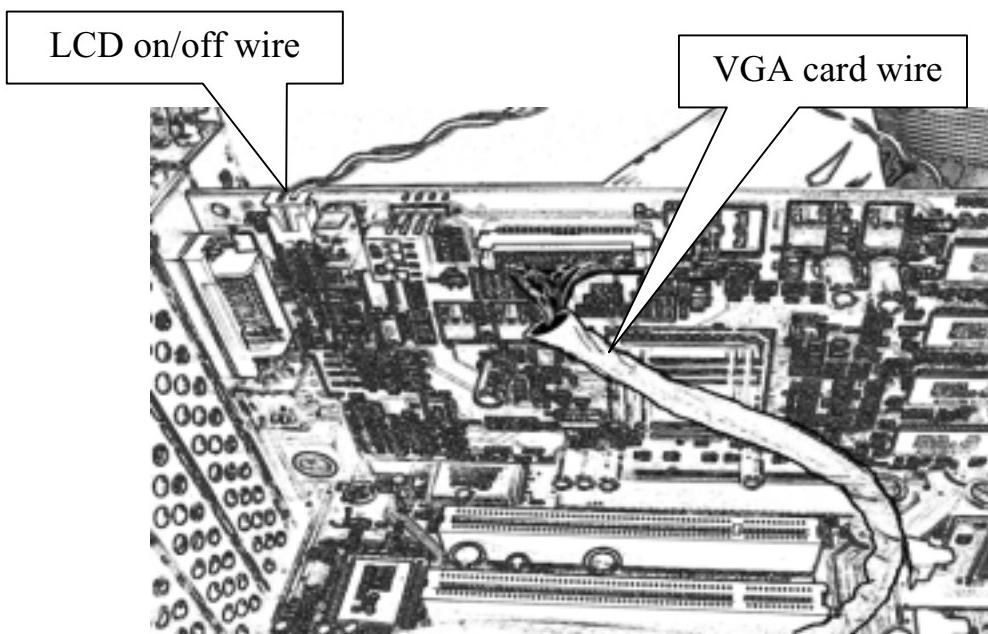
＊Please refer to your system board manual for detailed references.

15.Reinsert the bottom cover--------

Reinsert x 2
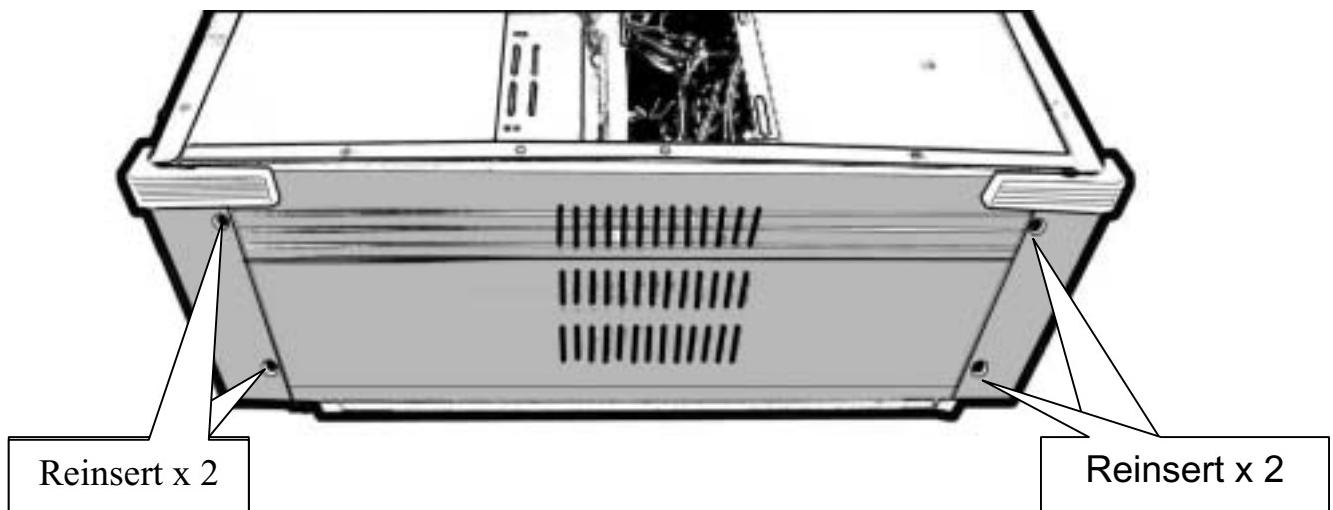
Reinsert x 2

16.Reinsert the side cover----------

Reinsert x 2

3mm

Be sure to use the Allen key driver while removing the side cover.

Reinsert x 2
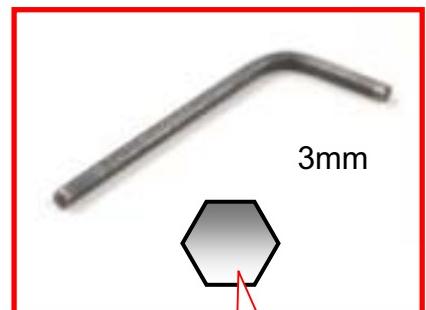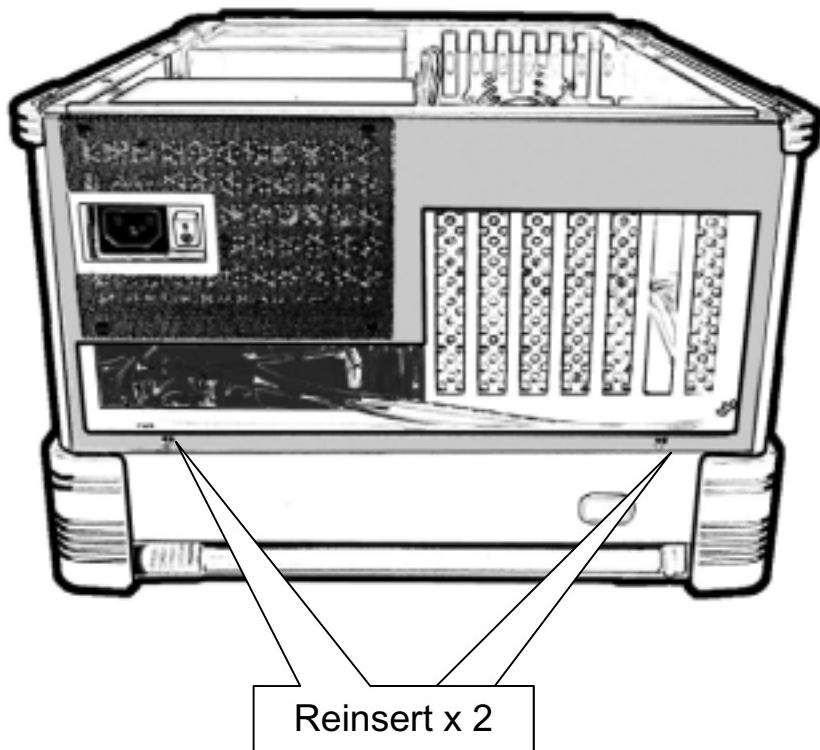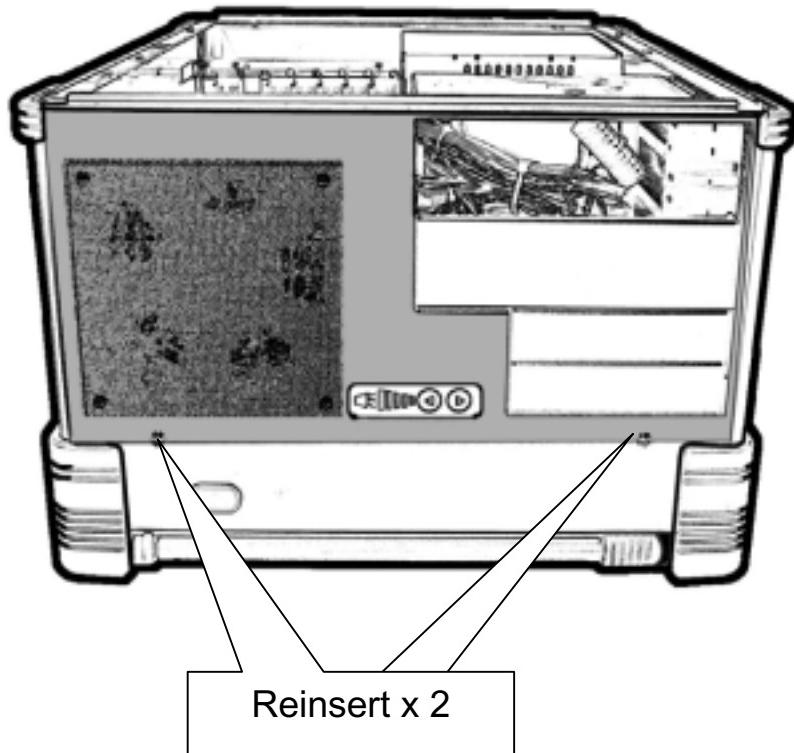
17. Remount the stabilizer bar --------

Unscrew x 4
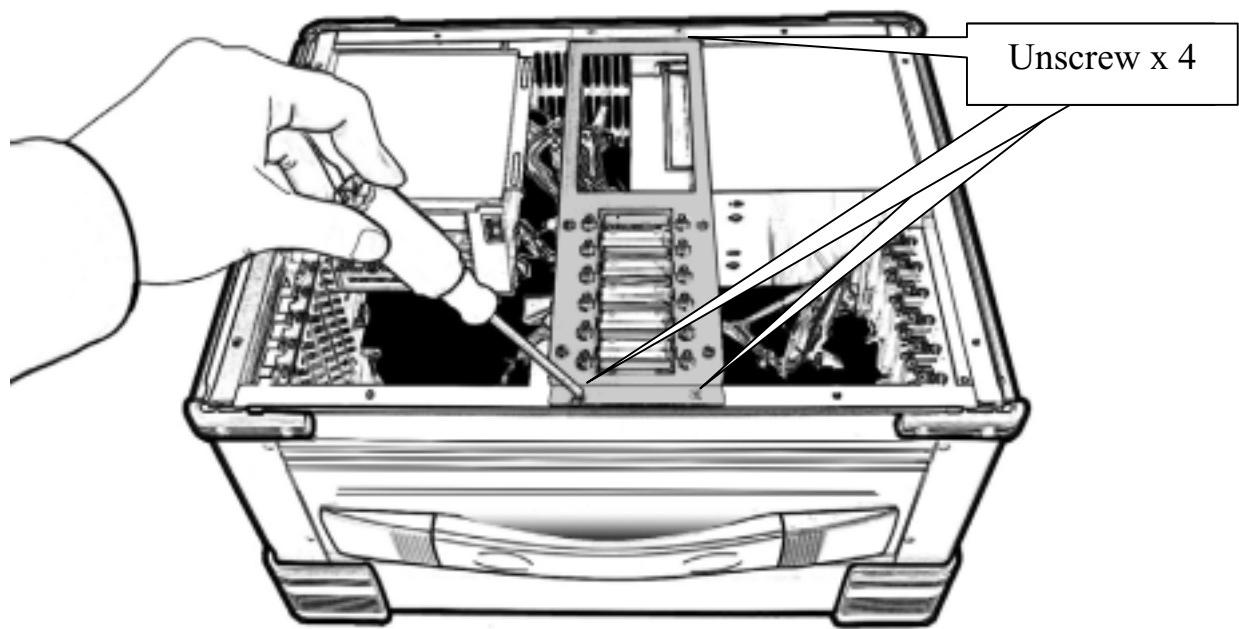
18. Put the rear cover back-------------

Reinsert

Reinsert

Reinsert

Reinsert

Reinsert

Reinsert

Reinsert

19. Additional Notice ----------------------

ILLUSTRATION OF THE ADJUSTABLE CARDHOLDER

Card

USB Pin definition

2   10

1   9
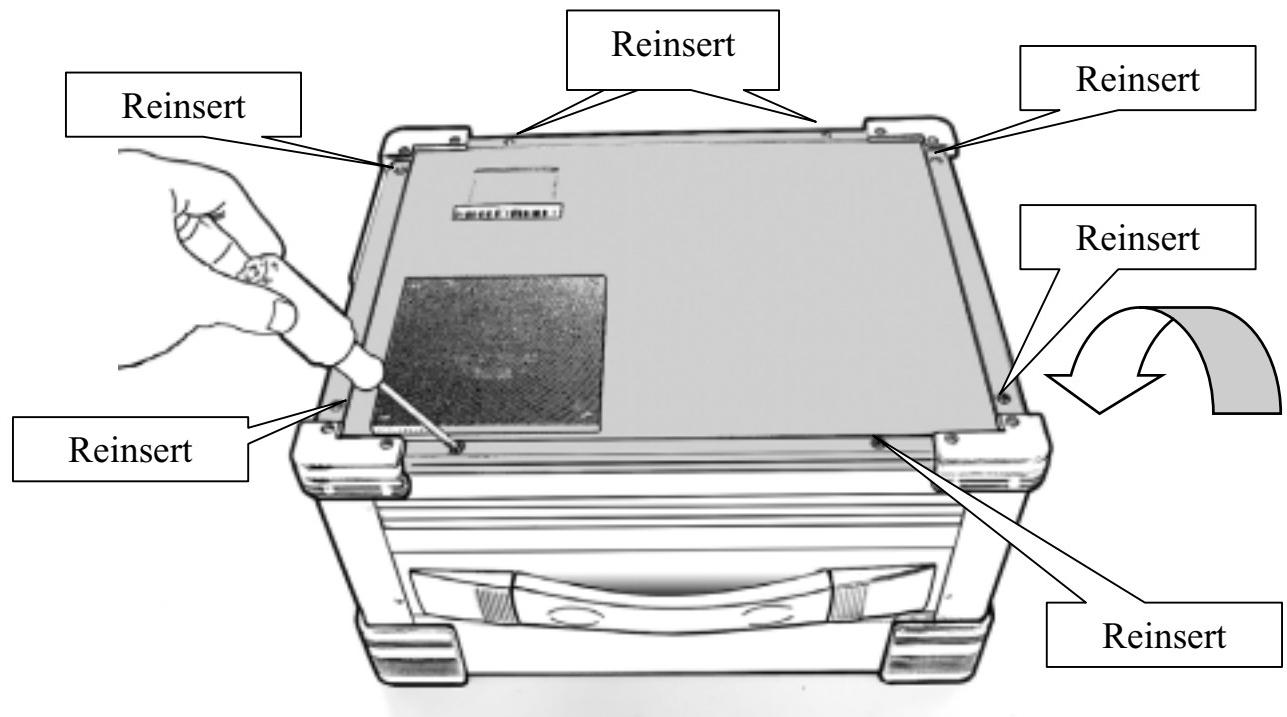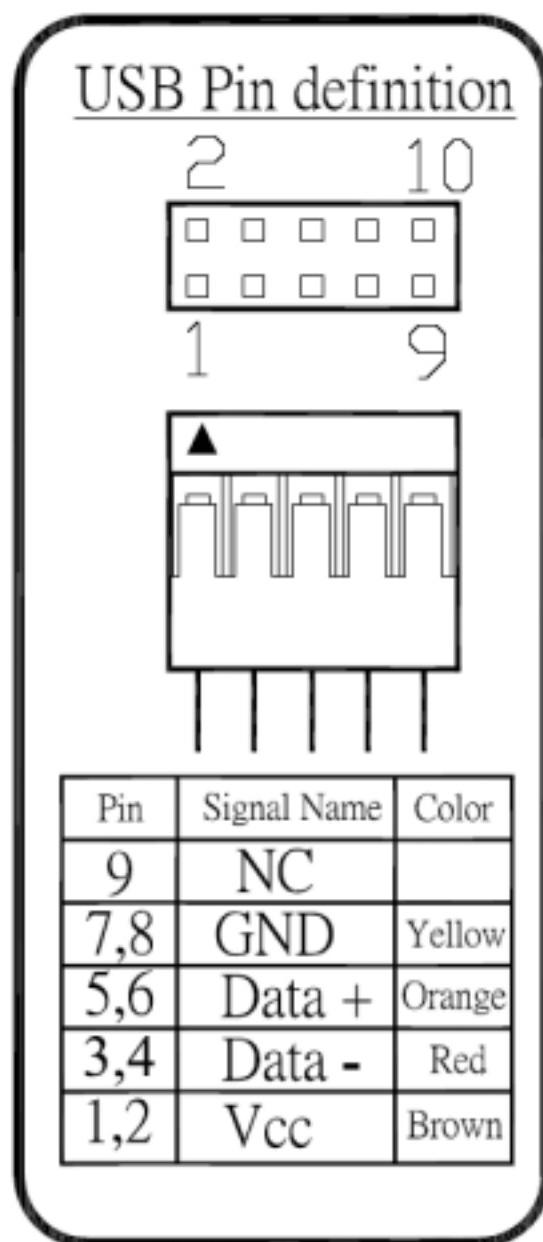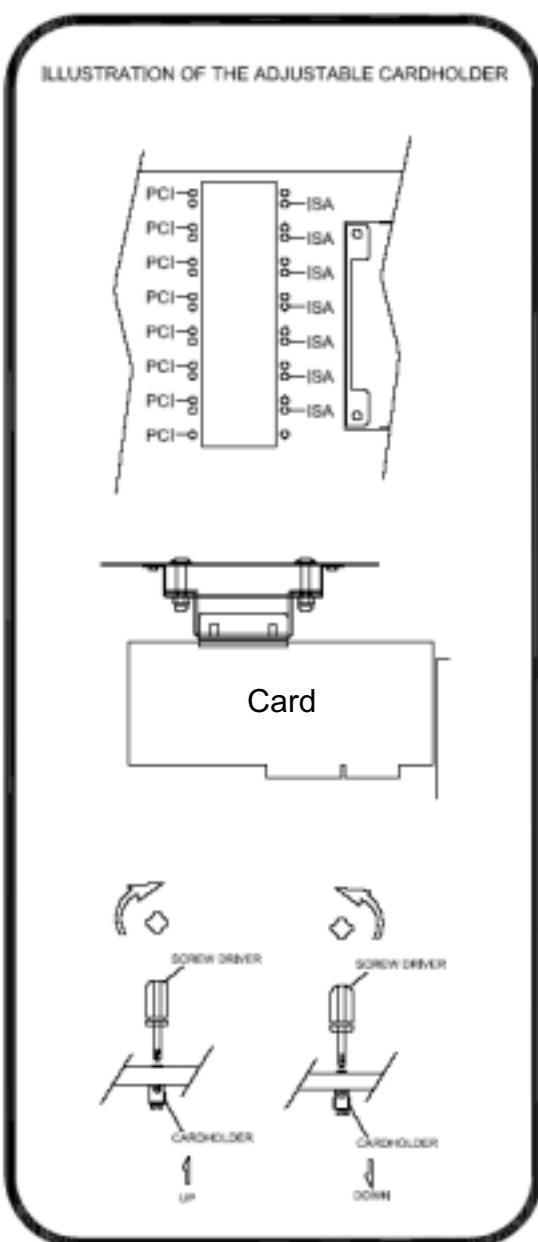
Pin	Signal Name	Color
9	NC	
7,8	GND	Yellow
5,6	Data +	Orange
3,4	Data -	Red
1,2	Vcc	Brown

CD-ROM Driver: CD-ROM driver is supplied with most operating system.

DOS Boot up: DOS boot up requires you to have a version of the DOS installed on hard disk drive or floppy. Depending on the execution sequence you have set in the batch file, you will usually get a DOS prompt after loading.

Window Boot up: Windows boot up requires you to have Windows installed in the hard disk drive. During Windows boot up, you will see a sequence of access to your hard disk drive which will eventually take you into a graphical user interface environment. As in the EMP, a copy of the Windows NT 4.0 Workstation is pre-installed in the machine.

Other O/S description: Many other operating systems are available in the market, such as Linux, Windows, Solaris and DOS. These operating systems will behave differently and you should react accordingly.

7.1 Handling of EMP:

You should always make sure the keyboard assembly is properly closed onto the EMP before transporting it. This will ensure you do not loose the keyboard as well as protecting the LCD screen. You may transport the portable in its carrying case, or you can carry the EMP on its handle located on top of the machine. The handle is located securely to the strongest part of the machine, and distributes the load of the EMP evenly as to allow easy carriage and proper balance.

7.2 Handling of Cable:

All cable should be treated with care. Do not over extend any cable and this could result in breakage internally in the cable. It is essential that cable with its plug be handled in the proper manner without force.

7.3 Handling of LCD:

Do not use any abrasive material to scratch the LCD screen, as they can leave marks on the surface. Do not apply any pressure to the surface of the LCD screen either with objects or hands; this will ensure that the screen do not suffer from internal damage or cracks.

7.4 Handling of Power:

Always make sure the power cord is in top condition before using them with the EMP. Make sure your power source is reliable and of proper standard.   The EMP power supply is capable of handling 100-240V and 50-60Hz. Do not use the EMP on an already overloaded circuit.

7.5 Handling of K/B:

The keyboard is essential in that it helps protect the LCD during transportation. You should always watch for spill liquid or small objects from entering the keyboard. And the touch pad surface should be kept dry and clean for proper usage.

7.6 Cleaning LCD:

1. Do not use cleaner that contain alcohol.
2. Do not use cloths that could be abrasive to the surface of the LCD.
3. Always gently wipe the LCD surface when cleaning.

7.7 Cleaning K/B:

1. Do not spill any liquid on to the keyboard.
2. Do not drop particle into the spacing between keys.
3. Using a compress air cleaner, you can remove the dust built-up within.

7.8 Cleaning Fan Filter:

1. Remove the filter from its housing.
2. Use a compress air cleaner to blow off the dust from the filter.
3. If necessary, you can wash the filter material, but do remember to dry it before inserting it back.
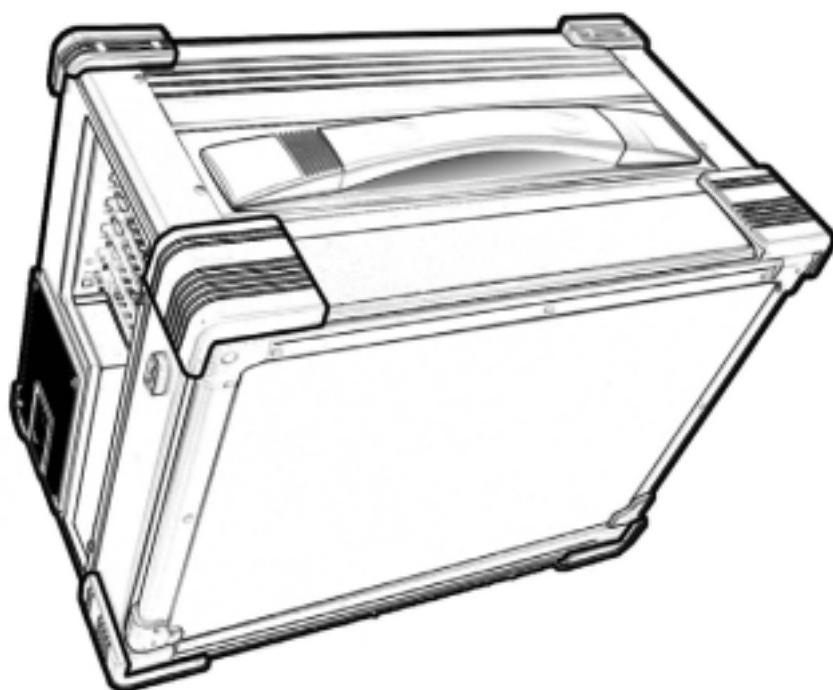
8.1 Installation problem:

1. Normally problem with a fail start up is due to installation problem.
2. Double check all the peripheral cards or items you have added to the EMP.
3. Are all the items seated properly?
4. Are all the cables connected back to its original or correct position?
5. Are the items you have added compatible?
6. Before you check for these, turn the computer off and unplug the power cord.
7. Check for 1 thru 5 and then re-power up the computer.
8. Remove all items that were added and re-try system power up.
9. If the system starts now, try inserting 1 new item in at a time and try powering up.
10.   Repeat this step until you get the desired result.

8.2 BIOS Beep Code:

The BIOS beep code indicates error in system initialization. The BIOS of the system board will associate with video and memory error. Please check your video card is properly seated and your memory is installed properly.

8.3 System Fails to power up:

1. Check you power connection first.
2. Check the main power switch is in the ON position (I).
3. Press the power button located in front of the machine.

8.4 No display (LCD):

1. Check all the proper power up procedure have been taken.
2. Hook up an external CRT to the VGA port, to check if video is present.
3. If video is present on external CRT, check the internal LCD cable connection.
4. Or check your VGA setting using a CRT to make sure LCD video is enabled.
5. If there is no video on external, check your system to make sure everything is seated properly.

6. If everything is seated properly and still no video, call us for further assistance.

8.5 External CRT no display:
1. Check to see if you have internal LCD video.
2. Check if your CRT is functioning properly.
3. Check your VGA setting to make sure external video is enabled.

8.6 Keyboard fails:
1. Make sure the keyboard plug is inserted completely into the portable.
2. Make sure you do not have another keyboard connected to the side I/O PS/2 port.

8.7 TOUCHPAD fails:
1. Make sure the keyboard plug is inserted completely into the portable.
2. If you have an external PS/2 mouse hook up on the side I/O PS/2 port, the touch pad will not function simultaneously.
3. If your operating system requires and does not load the mouse driver automatically, make sure you have the proper mouse driver loaded.

8.8 Floppy fails:
1. Make sure the diskette is of the proper specification (1.44MB, 720KB)
2. If floppy fail during POST, check internal cable fit.

8.9 CD-ROM fails:
1. Make sure the CD is readable.
2. If CD-ROM fails to be recognized during POST, check internal cable fit.

9.0 Standard SKD Accessory Kits

EMP 370				
Model	Accessory Kit SKD		Accessory Kit System	Qty
EMP *370*	**1**	User's Manual	User's Manual	1 / 1
	2	Driver CD	Driver CD	1 / 1
	3	ESD Bag	ESD Bag	1 / 1
	4	110 Power Cord 220 Power Card (Option)	110 Power Cord 220 Power Card (Option)	1 / 1
	5	Screw Pack (stabilizer)	Screw Pack (stabilizer)	1 / 1
	6	Stabilizer Supports Pack	Stabilizer Supports Pack	1 / 1
	7	Hardware Pack (system)		1 / 1
	8			
	9			